

## **ABSTRACT**

A method, and associated storage medium containing software and a system, comprises extracting a time domain impulse response from parameters that characterize a communication channel, generating a probability distribution function (PDF) of an output voltage based on the impulse response; and computing a relationship between bit error rate and voltage margin based on the final probability distribution function. Generating the PDF of the output voltage may comprise one or more of the following acts: quantizing the impulse response into a plurality of quantized levels, assigning taps to the quantized levels and determining a number of taps assigned to each quantized level, determining allowable voltage levels for each quantized level, and determining a probability of occurrence of each allowable voltage level, determining a PDF for each voltage level; and convolving all of the PDFs for the various voltage levels to obtain the PDF of the output voltage.